STIC Search Report
EIC 1700

STIC Database Tracking Number: 148492

TO: Chhaya Sayala **Location: REM 8A35** **Art Unit : 1761** **April 1, 2005** **Case Serial Number: 10/617265**	**From: Usha Shrestha** **Location: EIC 1700** **REMSEN 4B28** **Phone: 571/272-3519** **usha.shrestha@uspto.gov**

Search Notes

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=>  FILE HCAPLUS

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=> d his ful

     FILE 'HCAPLUS' ENTERED AT 11:52:36 ON 01 APR 2005
L1       1284398 SEA ABB=ON  PLU=ON  MSW OR
MUNICIPAL?(A)SOLID?(A)WASTE?
                  OR ?WASTE? OR SEWAG? OR ?TOXIC? OR SOLID(A)WASTE?
L2       3554673 SEA ABB=ON  PLU=ON  GEIGER?(A)COUNT? OR DETECT? OR
                 REMOV? OR EXTRACT? OR SCAN?
L3        537226 SEA ABB=ON  PLU=ON  RADIOACT? OR POISON? OR
CONTAMINAT?
                  OR (NUCLEAR? OR TOXIC?)(A)MATERIAL?
L4         21176 SEA ABB=ON  PLU=ON  L1(L)L2(L)L3
L5        887010 SEA ABB=ON  PLU=ON  SOIL? OR FERTILIZER? OR MULCH? OR
                 FEED?
L6          4595 SEA ABB=ON  PLU=ON  L4(L)L5
L7          1882 SEA ABB=ON  PLU=ON  L6 AND 60/SC
L8        407476 SEA ABB=ON  PLU=ON  L1(L)TREAT?
L9          5584 SEA ABB=ON  PLU=ON  L8(L)L2(L)L3
L10         1405 SEA ABB=ON  PLU=ON  L9(L)L5
L11          632 SEA ABB=ON  PLU=ON  L10 AND 60/SC
L12           66 SEA ABB=ON  PLU=ON  L11 AND DECONTAMINAT?
L13            0 SEA ABB=ON  PLU=ON  L12 AND GEIGER?(A)COUNT?
L14            9 SEA ABB=ON  PLU=ON  L1(L)GEIGER?(A)COUNT?
                 D SCAN
L15           25 SEA ABB=ON  PLU=ON  L12 AND MATERIAL?
                 D SCAN TI
                 D SCAN TI L14
                 D SCAN L14
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L16            2 SEA ABB=ON  PLU=ON  L14 AND WASTE?
                 D SCAN
L17           58 SEA ABB=ON  PLU=ON  L11(L)RADIOACT?
L18           34 SEA ABB=ON  PLU=ON  L11(L)RADIOACT?/CT
L19            9 SEA ABB=ON  PLU=ON  L18 AND POL/RL
L20           17 SEA ABB=ON  PLU=ON  L11 AND RADIOACT?(5A)(DETECT? OR
                 REMOV? OR COUNT?)
L21           19 SEA ABB=ON  PLU=ON  L20 OR L16
                 D SCAN TI

     FILE 'NTIS' ENTERED AT 13:32:47 ON 01 APR 2005
L22          486 SEA ABB=ON  PLU=ON  L1(L)RADIOACT?(5A)(DETECT? OR
                 REMOV? OR COUNT?)
L23            0 SEA ABB=ON  PLU=ON  L22(L)GEIGER?(A)COUNT?
L24          113 SEA ABB=ON  PLU=ON  L22 AND WASTE?(A)MANAGEMENT?
                 D SCAN TI
                 D TRIAL
                 D TRIAL
                 D TRIAL 2-5
L25           32 SEA ABB=ON  PLU=ON
L1(L)RADIOACT?(A)MATERIAL?(3A)(DETE
                 CT? OR REMOV? OR COUNT?)
                 D TRIAL 1-5
L26            0 SEA ABB=ON  PLU=ON  L25 AND MUNICIPAL?(A)WASTE?
L27            0 SEA ABB=ON  PLU=ON  L25 AND SOILD?(A)WASTE?
L28            4 SEA ABB=ON  PLU=ON  L25 AND (SOIL? OR FERTILIZER? OR
                 MULCH?)
                 D SCAN

     FILE 'WPIX' ENTERED AT 13:46:31 ON 01 APR 2005
L29           66 SEA ABB=ON  PLU=ON
L1(L)RADIOACT?(A)MATERIAL?(3A)(DETE
                 CT? OR REMOV? OR COUNT?)
L30            1 SEA ABB=ON  PLU=ON  L29 AND GEIGER(A)COUNT?
                 D SCAN

     FILE 'COMPENDEX' ENTERED AT 13:49:18 ON 01 APR 2005
L31           13 SEA ABB=ON  PLU=ON
L1(L)RADIOACT?(A)MATERIAL?(3A)(DETE
                 CT? OR REMOV? OR COUNT?)
L32            0 SEA ABB=ON  PLU=ON  L31 AND GEIGER?(A)COUNT?
L33            1 SEA ABB=ON  PLU=ON  L31 AND (MUNICIPAL? OR
SOLID(A)WAST
                 E?)
                 D SCAN

     FILE 'POLLUAB' ENTERED AT 13:52:36 ON 01 APR 2005
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L34             7 SEA ABB=ON  PLU=ON
L1(L)RADIOACT?(A)MATERIAL?(3A)(DETE
                  CT? OR REMOV? OR COUNT?)
L35             0 SEA ABB=ON  PLU=ON  L34 AND GEIGER?(A)COUNT?
L36             0 SEA ABB=ON  PLU=ON  L34 AND GEIGER?
L37             1 SEA ABB=ON  PLU=ON  L34 AND (MUNICIPAL? OR
SOLID(A)WAST
                  E?)

     FILE 'JICST-EPLUS' ENTERED AT 13:54:54 ON 01 APR 2005
L38             1 SEA ABB=ON  PLU=ON
L1(L)RADIOACT?(A)MATERIAL?(3A)(DETE
                  CT? OR REMOV? OR COUNT?)
                  D SCAN

     FILE 'BIOSIS' ENTERED AT 13:55:48 ON 01 APR 2005
L39             1 SEA ABB=ON  PLU=ON
L1(L)RADIOACT?(A)MATERIAL?(3A)(DETE
                  CT? OR REMOV? OR COUNT?)
                  D SCAN

     FILE 'TOXCENTER' ENTERED AT 13:56:26 ON 01 APR 2005
L40            35 SEA ABB=ON  PLU=ON
L1(L)RADIOACT?(A)MATERIAL?(3A)(DETE
                  CT? OR REMOV? OR COUNT?)
L41             0 SEA ABB=ON  PLU=ON  L40 AND GEIGER?(A)COUNT?
L42             3 SEA ABB=ON  PLU=ON  RADIOACT?(A)MATERIAL? AND
GEIGER?(A
                  )COUNT?
                  D SCAN

     FILE 'WPIX' ENTERED AT 13:58:34 ON 01 APR 2005
                  D L30 ALL

     FILE 'NTIS' ENTERED AT 14:17:46 ON 01 APR 2005
L43             0 SEA ABB=ON  PLU=ON  L25 AND
RADIOACT?(3A)DETECT?(3A)WAS
                  TE?
L44             1 SEA ABB=ON  PLU=ON  L25 AND
RADIOACT?(5A)DETECT?(5A)WAS
                  TE?
                  D SCAN
                  D TRIAL

     FILE 'WPIX' ENTERED AT 14:19:36 ON 01 APR 2005
L45            11 SEA ABB=ON  PLU=ON  L25 AND
RADIOACT?(5A)DETECT?(5A)WAS
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                TE?
                D SCAN
L46           1 SEA ABB=ON  PLU=ON  L45 AND (REMOV? OR EXTRACT?)
                D SCAN

     FILE 'COMPENDEX' ENTERED AT 14:23:38 ON 01 APR 2005
L47           0 SEA ABB=ON  PLU=ON  L25 AND
RADIOACT?(5A)DETECT?(5A)WAS
                TE?

     FILE 'POLLUAB' ENTERED AT 14:24:45 ON 01 APR 2005
L48           2 SEA ABB=ON  PLU=ON  L25 AND
RADIOACT?(5A)DETECT?(5A)WAS
                TE?
                D SCAN

     FILE 'JICST-EPLUS' ENTERED AT 14:25:39 ON 01 APR 2005
L49           0 SEA ABB=ON  PLU=ON  L25 AND
RADIOACT?(5A)DETECT?(5A)WAS
                TE?

     FILE 'BIOSIS' ENTERED AT 14:26:00 ON 01 APR 2005
L50           0 SEA ABB=ON  PLU=ON  L25 AND
RADIOACT?(5A)DETECT?(5A)WAS
                TE?

     FILE 'TOXCENTER' ENTERED AT 14:26:35 ON 01 APR 2005
L51           0 SEA ABB=ON  PLU=ON  L25 AND
RADIOACT?(5A)DETECT?(5A)WAS
                TE?


     FILE HCAPLUS

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FILE NTIS
FILE LAST UPDATED: 25 MAR 2005 <20050325/UP>
FILE COVERS 1964 TO DATE.

FILE WPIX
FILE LAST UPDATED: 24 MAR 2005 <20050324/UP>
MOST RECENT DERWENT UPDATE: 200520 <200520/DW>
DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

FILE COMPENDEX
FILE LAST UPDATED: 28 MAR 2005 <20050328/UP>
FILE COVERS 1970 TO DATE.

FILE POLLUAB
FILE COVERS 1970 TO 14 Mar 2005 (20050314/ED)

FILE JICST-EPLUS
FILE COVERS 1985 TO 28 MAR 2005 (20050328/ED)

THE JICST-EPLUS FILE HAS BEEN RELOADED TO REFLECT THE 1999 CONTROL
TERM (/CT) THESAURUS RELOAD.

FILE BIOSIS
FILE COVERS 1969 TO DATE.
CAS REGISTRY NUMBERS AND CHEMICAL NAMES (CNs) PRESENT
FROM JANUARY 1969 TO DATE.

FILE TOXCENTER

FILE COVERS 1907 TO 29 Mar 2005 (20050329/ED)

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=> d que l21
L1      1284398 SEA FILE=HCAPLUS ABB=ON  PLU=ON  MSW OR
MUNICIPAL?(A)SO
                LID?(A)WASTE? OR ?WASTE? OR SEWAG? OR ?TOXIC? OR
                SOLID(A)WASTE?
L2      3554673 SEA FILE=HCAPLUS ABB=ON  PLU=ON  GEIGER?(A)COUNT? OR
                DETECT? OR REMOV? OR EXTRACT? OR SCAN?
L3       537226 SEA FILE=HCAPLUS ABB=ON  PLU=ON  RADIOACT? OR POISON?
                OR CONTAMINAT? OR (NUCLEAR? OR TOXIC?)(A)MATERIAL?
L5       887010 SEA FILE=HCAPLUS ABB=ON  PLU=ON  SOIL? OR FERTILIZER?
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                OR MULCH? OR FEED?
L8        407476 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L1(L)TREAT?
L9          5584 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L8(L)L2(L)L3
L10         1405 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L9(L)L5
L11          632 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L10 AND 60/SC
L14            9 SEA FILE=HCAPLUS ABB=ON  PLU=ON
L1(L)GEIGER?(A)COUNT?

L16            2 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L14 AND WASTE?
L20           17 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L11 AND
RADIOACT?(5A)(
                DETECT? OR REMOV? OR COUNT?)
L21           19 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L20 OR L16


=> d que l28
L1       1284398 SEA FILE=HCAPLUS ABB=ON  PLU=ON  MSW OR
MUNICIPAL?(A)SO
                LID?(A)WASTE? OR ?WASTE? OR SEWAG? OR ?TOXIC? OR
                SOLID(A)WASTE?
L25           32 SEA FILE=NTIS ABB=ON  PLU=ON
L1(L)RADIOACT?(A)MATERIAL
                ?(3A)(DETECT? OR REMOV? OR COUNT?)
L28            4 SEA FILE=NTIS ABB=ON  PLU=ON  L25 AND (SOIL? OR
                FERTILIZER? OR MULCH?)


=> d que l30
L1       1284398 SEA FILE=HCAPLUS ABB=ON  PLU=ON  MSW OR
MUNICIPAL?(A)SO
                LID?(A)WASTE? OR ?WASTE? OR SEWAG? OR ?TOXIC? OR
                SOLID(A)WASTE?
L29           66 SEA FILE=WPIX ABB=ON  PLU=ON
L1(L)RADIOACT?(A)MATERIAL
                ?(3A)(DETECT? OR REMOV? OR COUNT?)
L30            1 SEA FILE=WPIX ABB=ON  PLU=ON  L29 AND GEIGER(A)COUNT?


=> d que l33
L1       1284398 SEA FILE=HCAPLUS ABB=ON  PLU=ON  MSW OR
MUNICIPAL?(A)SO
                LID?(A)WASTE? OR ?WASTE? OR SEWAG? OR ?TOXIC? OR
                SOLID(A)WASTE?
L31           13 SEA FILE=COMPENDEX ABB=ON  PLU=ON
L1(L)RADIOACT?(A)MAT
                ERIAL?(3A)(DETECT? OR REMOV? OR COUNT?)
L33            1 SEA FILE=COMPENDEX ABB=ON  PLU=ON  L31 AND
(MUNICIPAL?
```

```
                OR SOLID(A)WASTE?)


=> d que l37
L1       1284398 SEA FILE=HCAPLUS ABB=ON  PLU=ON  MSW OR
MUNICIPAL?(A)SO
                LID?(A)WASTE? OR ?WASTE? OR SEWAG? OR ?TOXIC? OR
                SOLID(A)WASTE?
L34            7 SEA FILE=POLLUAB ABB=ON  PLU=ON
L1(L)RADIOACT?(A)MATER
                IAL?(3A)(DETECT? OR REMOV? OR COUNT?)
L37            1 SEA FILE=POLLUAB ABB=ON  PLU=ON  L34 AND (MUNICIPAL?
                OR SOLID(A)WASTE?)


=> d que l38
L1       1284398 SEA FILE=HCAPLUS ABB=ON  PLU=ON  MSW OR
MUNICIPAL?(A)SO
                LID?(A)WASTE? OR ?WASTE? OR SEWAG? OR ?TOXIC? OR
                SOLID(A)WASTE?
L38            1 SEA FILE=JICST-EPLUS ABB=ON  PLU=ON
L1(L)RADIOACT?(A)M
                ATERIAL?(3A)(DETECT? OR REMOV? OR COUNT?)


=> d que l39
L1       1284398 SEA FILE=HCAPLUS ABB=ON  PLU=ON  MSW OR
MUNICIPAL?(A)SO
                LID?(A)WASTE? OR ?WASTE? OR SEWAG? OR ?TOXIC? OR
                SOLID(A)WASTE?
L39            1 SEA FILE=BIOSIS ABB=ON  PLU=ON
L1(L)RADIOACT?(A)MATERI
                AL?(3A)(DETECT? OR REMOV? OR COUNT?)


=> d que l42
L42            3 SEA FILE=TOXCENTER ABB=ON  PLU=ON
RADIOACT?(A)MATERIAL
                ? AND GEIGER?(A)COUNT?


=> d que l44
L1       1284398 SEA FILE=HCAPLUS ABB=ON  PLU=ON  MSW OR
MUNICIPAL?(A)SO
                LID?(A)WASTE? OR ?WASTE? OR SEWAG? OR ?TOXIC? OR
                SOLID(A)WASTE?
L25           32 SEA FILE=NTIS ABB=ON  PLU=ON
L1(L)RADIOACT?(A)MATERIAL
```

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                ?(3A)(DETECT? OR REMOV? OR COUNT?)
L44             1 SEA FILE=NTIS ABB=ON  PLU=ON  L25 AND
RADIOACT?(5A)DETE
                CT?(5A)WASTE?


=> d que l45
L1        1284398 SEA FILE=HCAPLUS ABB=ON  PLU=ON  MSW OR
MUNICIPAL?(A)SO
                LID?(A)WASTE? OR ?WASTE? OR SEWAG? OR ?TOXIC? OR
                SOLID(A)WASTE?
L25            32 SEA FILE=NTIS ABB=ON  PLU=ON
L1(L)RADIOACT?(A)MATERIAL
                ?(3A)(DETECT? OR REMOV? OR COUNT?)
L45            11 SEA FILE=WPIX ABB=ON  PLU=ON  L25 AND
RADIOACT?(5A)DETE
                CT?(5A)WASTE?


=> d que l48
L1        1284398 SEA FILE=HCAPLUS ABB=ON  PLU=ON  MSW OR
MUNICIPAL?(A)SO
                LID?(A)WASTE? OR ?WASTE? OR SEWAG? OR ?TOXIC? OR
                SOLID(A)WASTE?
L25            32 SEA FILE=NTIS ABB=ON  PLU=ON
L1(L)RADIOACT?(A)MATERIAL
                ?(3A)(DETECT? OR REMOV? OR COUNT?)
L48             2 SEA FILE=POLLUAB ABB=ON  PLU=ON  L25 AND
RADIOACT?(5A)D
                ETECT?(5A)WASTE?


=> => d l52 1-36 ibib abs hitstr hitind

L52  ANSWER 1 OF 36  WPIX  COPYRIGHT 2005 THE THOMSON CORP on STN
     DUPLICATE 1
ACCESSION NUMBER:      2004-091266 [09]   WPIX
DOC. NO. NON-CPI:      N2004-073099
DOC. NO. CPI:          C2004-037166
TITLE:                 Converting municipal solid waste into useful
                       compost material by extracting valuable
materials
                       from solid waste, scanning solid waste with
                       Geiger counter, and sterilizing
                       drum contents by adding steam and depressurizing
                       drum.
DERWENT CLASS:         D16 P43
```

INVENTOR(S): HELGE, O F S
PATENT ASSIGNEE(S): (GLOB-N) GLOBAL SOLUTIONS SYSTEMS LLC
COUNTRY COUNT: 101
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2004004936	A2	20040115	(200409)*	EN	23

RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SC SD SE SG SK SL TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA ZM ZW

AU 2003251880 A1 20040123 (200459)

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2004004936	A2	WO 2003-US21829	20030708
AU 2003251880	A1	AU 2003-251880	20030708

FILING DETAILS:

PATENT NO	KIND		PATENT NO
AU 2003251880	A1	Based on	WO 2004004936

PRIORITY APPLN. INFO: US 2002-394384P 20020708
AN 2004-091266 [09] WPIX
AB WO2004004936 A UPAB: 20040205
NOVELTY - Converting **municipal solid waste** into useful compost material, is new.
DETAILED DESCRIPTION - Converting **municipal solid waste** into useful compost material comprises providing a stream of **solid waste** for treatment; extracting valuable materials from the **solid waste**; scanning the remaining

solid waste with a **Geiger counter** to **detect radioactive materials**; **removing detected radioactive materials** from the **solid waste**; grinding the **solid waste** into particles of at most 1 millimeter; transferring the ground **solid waste** into a drum, adding manure and sludge to the drum; sealing the drum; rotating the drum to mix the ground **solid waste**, manure, and sludge; sterilizing the contents of the drum by adding steam to pressurize and heat the drum to 120 deg. for 37 minutes; permitting the drum to cool for 10-30 minutes; and depressurizing the drum by venting the remaining steam; and removing the contents of the drum.

USE - For converting **municipal solid waste** into useful compost material, e.g. soil/feed modifiers, mulch, animal/fish food.

ADVANTAGE - The invention has no harmful emission, e.g. arsenic from the **waste** stream during process.

Dwg.0/3

L52 ANSWER 2 OF 36 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:249952 HCAPLUS
DOCUMENT NUMBER: 136:267550
TITLE: Precipitation-membrane distillation hybrid system for the treatment of aqueous streams
INVENTOR(S): Bader, Mansour S.
PATENT ASSIGNEE(S): USA
SOURCE: U.S., 25 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6365051	B1	20020402	US 1999-416320	1999
				1012
US 6663778	B1	20031216	US 2002-94562	2002

0308
PRIORITY APPLN. INFO.: US 1999-416320 A2

1999

1012

AB A method of **treating** an aqueous stream having inorg. material dissolved therein, the method comprising the steps of: (a) adding organic solvent to the aqueous stream in an amount effective to form an inorg. precipitate comprising at least a portion of the inorg. material; (b) **removing** at least most of the organic solvent from the aqueous stream by vacuum membrane distillation; and (c) after step (b), **removing** at least most of the inorg. precipitate from the aqueous stream. Primary candidates for the invented process would be for the **treatment** of DOE **waste** streams. An addnl. application of this process beyond the scope of the DOE **waste** streams, would be for the **treatment** of produced water **radioactivity** (naturally occurring **radioactive** materials) in the oil, gas, geothermal and mining industries. Other examples of potential industrial applications include the **removal** of sulfate and scale salts from: (1) seawater to be used as a water flood in offshore oil and gas reservoirs; (2) cooling towers blowdown streams; (3) **feed** and/or concentrate streams in pressure-driven membrane processes. Other examples of potential environmental applications include the **removal** of: (1) chloride salts from **contaminated** groundwater with road deicing salts; (2) transition metals from landfill leachate or groundwater; and (3) other streams resulting from, for instance, plating facilities, washrack facilities, metal cleaning facilities, paint stripping facilities and laundries facilities.

IC ICM B01D061-36
ICS C02F001-54

NCL 210640000

CC **60-2** (Waste Treatment and Disposal)
Section cross-reference(s): 51, 52, 55, 56, 61

IT **Radioactive** wastes
(liquid; **removal** of radionuclides, metals, and volatile orgs. using hybrid precipitation-vacuum membrane distillation system for

treatment of aqueous streams)
IT Gas field waters
Groundwaters
Landfill leachate
Radioactive wastewater
(**removal** of contaminants from, by precipitation-vacuum membrane distillation hybrid system)
REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L52 ANSWER 3 OF 36 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:75535 HCAPLUS
DOCUMENT NUMBER: 140:275330
TITLE: Radiological monitoring activities at the Metropolitan Water Reclamation District of Greater Chicago
AUTHOR(S): Khalique, Abdul; Pietz, Richard I.; Tata, Prakasam; Lanyon, Richard
CORPORATE SOURCE: Research and Development Department, Metropolitan Water Reclamation District of Greater Chicago, Cicero, IL, 60804, USA
SOURCE: WEFTEC.02, Conference Proceedings, Annual Technical Exhibition & Conference, 75th, Chicago, IL, United States, Sept. 28-Oct. 2, 2002 (2002), 3265-3280. Water Environment Federation: Alexandria, Va.
CODEN: 69EWYB
DOCUMENT TYPE: Conference; (computer optical disk)
LANGUAGE: English
AB **Radioactivity** may enter the sanitary sewer system through a variety of sources including man-made and natural sources. The raw **sewage** is **treated** at the water reclamation plant (WRP) to **remove** contaminants. The **radioactivity removed** from the raw **sewage** by the **wastewater treatment** process is concentrated in biosolids. There have been several reported cases of **radioactive contamination** in **wastewater treatment** plants in the US over the last 20 yr. This study was conducted to measure the **radioactivity** concentration in raw **sewage**, final effluent, sludge, and biosolids at the facilities owned and operated by the Metropolitan Water Reclamation District of Greater Chicago. The radiol. monitoring data helps to assure adequate

effluent water quality at the District's 7 WRPs. It also helps to minimize the build-up of **radioactivity** in landfills, and assures that the biosolids are suitable for land application as **fertilizer.** The data provide information to determine if the **treatment** plant workers and the public are exposed to **radioactivity** in biosolids that are above normal background levels.

CC **60-5** (Waste Treatment and Disposal)
Section cross-reference(s): 59

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L52 ANSWER 4 OF 36 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
ACCESSION NUMBER: 2002-001422 [01] WPIX
DOC. NO. NON-CPI: N2002-001061
TITLE: **Radioactive material detection** method for outer side of nuclear **waste** storage medium, involves directing laser onto target areas and directing the luminous plasma from target area to spectrometer.
DERWENT CLASS: S03 V07 V08
INVENTOR(S): BRASSINGTON, P S; WHITEHOUSE, A I
PATENT ASSIGNEE(S): (PHOT-N) APPLIED PHOTONICS LTD; (WHIT-I) WHITEHOUSE A I
COUNTRY COUNT: 95
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
GB 2359886	A	20010905	(200201)*		15
WO 2001067075	A1	20010913	(200201)	EN	

RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

AU 2001035807 A 20010917 (200204)
US 2003147072 A1 20030807 (200358)

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
GB 2359886	A	GB 2000-5180	20000304
WO 2001067075	A1	WO 2001-GB866	20010301
AU 2001035807	A	AU 2001-35807	20010301
US 2003147072	A1	WO 2001-GB866	20010301
		US 2002-220679	20021031

FILING DETAILS:

PATENT NO	KIND		PATENT NO
AU 2001035807	A	Based on	WO 2001067075

PRIORITY APPLN. INFO: GB 2000-5180 20000304
AN 2002-001422 [01] WPIX
AB GB 2359886 A UPAB: 20020105
NOVELTY - Laser is directed onto target areas containing radioactive materials and a luminous plasma or spark is generated from the target area. The luminous plasma or spark is collected and directed to a spectroscope, where the light is analyzed for predetermined atomic emission spectra arising from electronic transitions.

USE - For detection of vitrified nuclear waste on outer side of nuclear waste storage container.

ADVANTAGE - Signal is generated from surface deposits like vitrified nuclear waste without generating any signal from underlying substrate, therefore unwanted spectral interference from substrate is eliminated and damage to substrate is reduced.

DESCRIPTION OF DRAWING(S) - The figure shows the monitoring state of contamination on outer surface of waste drum.
Dwg.2/2

L52 ANSWER 5 OF 36 POLLUAB COPYRIGHT 2005 CSA on STN DUPLICATE 2
ACCESSION NUMBER: 2003:1988 POLLUAB
TITLE: New regulations and guidance for dealing with radioactivity in **solid waste** in Pennsylvania
AUTHOR: Allard, D.; Kirk, K.P.
CORPORATE SOURCE: Bureau of Radiation Protection, PO BOX 8469, Harrisburg, PA 17061, USA
SOURCE: Health Physics [Health Phys.], (20010600) vol. 80,

no. 6, pp. S109-S110.
Meeting Info.: 46. Annual Meeting of the Health Physics Society. Cleveland, OH (USA). 10-14 Jun 2001.
ISSN: 0017-9078.
DOCUMENT TYPE: Journal
TREATMENT CODE: Abstract
FILE SEGMENT: P
LANGUAGE: English
SUMMARY LANGUAGE: English

AB The Department has the responsibility for protecting the health and safety of the citizens in the Commonwealth, and the environment from **toxic** and hazardous material contaminants. This includes most sources of radiation. With increasing frequency, **radioactive materials** (RAM) have been **detected** in the **solid waste** stream by radiation monitors installed at some processing and disposal facilities. The majority of the materials detected are short-lived nuclear medicine radionuclides (e.g., super(131)I, super(99m)Tc, super(201)Tl, etc.). However, often naturally occurring radioactive material (NORM), technologically enhanced NORM, consumer products with RAM, and lost sealed sources (e.g., super(192)Ir, super(226)Ra, super(137)Cs) are detected. These examples of RAM that may set off facility radiation alarms can be regulated through specific or general license, deregulated, exempt or unregulated. Additionally, in the past there have been no requirements to have radiation monitors, nor was there a standard for alarm set point, system background, or gamma energy discrimination. Regardless of the probable type of RAM in the **solid waste** (i.e., short-lived medical radionuclides), state Radiation Protection Program staff have promptly responded to numerous alarms. This has caused a measurable impact on other program activities, such as x-ray equipment and RAM user inspections. With the potential for serious impact on human health, safety and the environment from some types of RAM in the **solid waste** stream, the Department Bureaus of Radiation Protection and Land Recycling & **Waste** Management have jointly developed final regulations requiring monitoring for radiation and radioactive materials at **municipal** and residual **solid waste** facilities in the state. A comprehensive guidance document has also been developed for the regulated community to assist with implementation. This work describes the nature of the problem,

program experience, new regulatory limitations and radiation monitoring requirements, and a maximum alarm set point standard. Also outlined are required instrumentation performance checks, facility Action Plan, training and records, the public dose limits that will be applied to any effluents. A graded response to alarms at two radiation Action Levels, with appropriate RAM characterization, is expected to allow facilities and the Department to more effectively manage the materials that might be discovered in **solid waste.**

L52 ANSWER 6 OF 36 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
ACCESSION NUMBER: 2000-237944 [20] WPIX
DOC. NO. NON-CPI: N2000-178370
DOC. NO. CPI: C2000-072590
TITLE: **Radioactive** decay **detection** for nuclear **waste** comprises providing detector array having liquid scintillation material, with phototubes, and crystalline solid, and stimulating of detectors.
DERWENT CLASS: K08 S03 U12
INVENTOR(S): ARYAEINEJAD, R; COLE, J D; DRIGERT, M W; REBER, E L
PATENT ASSIGNEE(S): (LOCK) LOCKHEED MARTIN IDAHO TECHNOLOGIES CO; (BECH-N) BECHTEL BWXT IDAHO LLC
COUNTRY COUNT: 85
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2000013042	A1	20000309	(200020)*	EN	43
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ UG ZW					
W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GE GH GM HR HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZA ZW					
AU 9964956	A	20000321	(200031)		
US 6255657	B1	20010703	(200140)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2000013042	A1	WO 1999-US20049	19990901
AU 9964956	A	AU 1999-64956	19990901
US 6255657	B1	US 1998-145054	19980901

FILING DETAILS:

PATENT NO	KIND		PATENT NO
AU 9964956	A	Based on	WO 2000013042

PRIORITY APPLN. INFO: US 1998-145054 19980901
AN 2000-237944 [20] WPIX
AB WO 200013042 A UPAB: 20000426
NOVELTY - Radioactive decay is detected by providing detectors (10) proximate a sample (20), comprising a radioactive material, and stimulating at least one of the detectors to generate at least one electrical signal. The detectors comprise first and second sets. The first set uses liquid scintillation material coupled with phototubes (30). The second set uses a crystalline solid (40).

DETAILED DESCRIPTION - Radioactive decay is detected by providing a sample comprising a **radioactive material**, providing **detectors** proximate the sample, and stimulating at least one of the **detectors.** The **radioactive material** generates decay particles. The detectors comprise first and second sets. The first set comprises liquid state detectors. The liquid state detectors utilize liquid scintillation material coupled with phototubes to generate a first electrical signal. The second set comprises solid state detectors. The solid state detectors utilize a crystalline solid to generate a second electrical signal. The electrical signals respond to decay particles stimulating the detectors. At least one of the first and second electrical signals is indicative of radioactive decay in the sample.

INDEPENDENT CLAIMS are included for the following:

(a) a method of distinguishing neutron stimulation of a radiation particle detector from gamma -ray stimulation of the detector;

(b) a method of quantitating an amount of radioactive nuclei

present in a sample;
(c) a method of identifying and quantitating a radioactive nuclei;
(d) an apparatus for detecting radioactive decay; and
(e) an apparatus for identifying and quantitating radioactive nuclei of a sample comprising radioactive material.
USE - For nuclear **waste.**
ADVANTAGE - The process is faster in acquisition speed and has high efficiency by utilizing gamma -rays and fast neutrons for identification and quantitation of fissile material.
DESCRIPTION OF DRAWING(S) - The drawing shows a diagrammatic view of the apparatus used for identifying and quantitating radioactive nuclei.
Detector array 10
Sample 20
Phototube detectors 30
Crystalline solid detectors 40
Dwg.3/4

L52 ANSWER 7 OF 36 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2001:195353 HCAPLUS
DOCUMENT NUMBER: 134:212166
TITLE: Mercury removal from DOE solid mixed waste using the GEMEP technology
AUTHOR(S): Weir, Barbara A.; Chung, Neville K.; Litz, John E.; Whisenhunt, Donald W., Jr.; Frankhouser, Brian M.
CORPORATE SOURCE: Metcalf & Eddy Inc., USA
SOURCE: WM 99 Proceedings, Tucson, AZ, United States, Feb. 28-Mar. 4, 1999 (1999), 2237-2257. American Nuclear Society: La Grange Park, Ill.
CODEN: 69AXMG
DOCUMENT TYPE: Conference; (computer optical disk)
LANGUAGE: English
AB Under the sponsorship of the Federal Energy Technol. Center (FETC), Metcalf & Eddy (M&E), in association with General Elec. Corporate Research and Development Center (GECRD), Colorado Minerals Research Institute (CMRI), and Oak Ridge National Laboratory (ORNL), conducted laboratory-scale and bench-scale tests of the General Elec. Mercury **Extraction** Process technol. on two mercury-**contaminated** mixed **solid wastes** from U.S. Department of Energy sites: sediment from the East Fork of

Poplar Creek, Oak Ridge (samples supplied by Oak Ridge National Laboratory), and drummed **soils** from Idaho National Environmental and Engineering Laboratory (INEEL). Fluorescent lamps provided by GE-CRD were also studied. The GEMEP technol., invented by the General Elec. Company, uses an **extraction** solution composed of aqueous potassium iodide plus iodine to **remove** mercury from **soils** and other **wastes.** The **extraction** solution is regenerated by chemical oxidation and reused, after the solubilized mercury is **removed** from solution by reducing it to the metallic state. The bench-scale testing conducted for this project included: (1) GEMEP **extraction** tests to optimize **extraction** conditions and determine the extent of co-**extraction** of radionuclides; (2) pre-screening (pre-segregation) tests to determine if initial separation steps could be used effectively to reduce the volume of material needing GEMEP **extraction**; and (3) demonstration of the complete **extraction**, mercury recovery, and iodine recovery and regeneration process. Initial characterization of the East Fork Poplar Creek sediments showed that the majority of the mercury and uranium in the sample was concentrated in the finer fractions. The average mercury concentration in the sediments before GEMEP **extraction** was 774 mg/kg. Depending on **extraction** conditions, concns. in the sediments after GEMEP **extraction** ranged from 2.7 to 140 mg/kg. Nearly all the uranium remained with the sediments, with only 0.01 to 0.13% of the initial uranium solubilizing into the **extraction** solution For fluorescent lamps, pre-segregation to **remove** aluminum end caps and wire and to segregate the glass and phosphor by size proved to be very effective in reducing the volume of mercury-**contaminated** material that required mercury **removal** to pass the TCLP test. Only finer fractions need to be **extracted** in the GEMEP process. GEMEP **extns** . under various conditions routinely **removed** >95% of the mercury from the lamp **waste.** Subsequent process steps to recover the mercury from the **extraction** solution were >99% efficient. The drummed INEEL **soil**/sludge (after pre-screening to **remove** larger-size material consisting of rocks, asphalt and tar) contained on the order of 800 mg/kg mercury. The complete GEMEP cycle consisting of **extraction**, mercury recovery, and iodine regeneration steps was performed on the screened INEEL **soils** for a total of 12 cycles. As long as the iodine/iodide concns. were kept sufficiently high (0.1

M iodine and 0.2 M iodide), greater than 95% of the mercury was **extracted** from the **soils.** Mercury recovery steps were also >99% efficient. Chemical usage costs for GEMEP **extraction** of INEEL **soil**/sludge were estimated to be $356 per **treated** ton, not considering costs for disposal of secondary **wastes** or **treated** solids as **radioactive waste.** The largest component of the cost is for iodine at $331 per **treated** ton. Measures for reducing iodine losses would need to be developed and employed to make the process economical for **treating** INEEL **waste** at full scale.

CC **60-4** (Waste Treatment and Disposal)
Section cross-reference(s): 71

IT Hazardous wastes
Radioactive wastes
Solid wastes
(mercury **removal** from solid mixed waste by extraction with aqueous potassium iodide and iodine)

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L52 ANSWER 8 OF 36 JICST-EPlus COPYRIGHT 2005 JST on STN
ACCESSION NUMBER: 990608362 JICST-EPlus
TITLE: Laser surface clearning of contaminated materials.
AUTHOR: IMASAKI KAZUO
CORPORATE SOURCE: Rezagijutsusogokenkyusho
SOURCE: Optronics, (1999) no. 210, pp. 135-138. Journal Code: Y0019A (Fig. 3, Tbl. 1, Ref. 3)
ISSN: 0286-9659
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Commentary
LANGUAGE: Japanese
STATUS: New

AB With progress of installation of nuclear facilities, renewal and **waste** disposal of facilities have been required in relation with aged deterioration of these facilities. Radioactive materials at a low level may adhere to the surface of the components of these facilities. As a technique to **remove** only these **radioactive materials**, surface cleaning using a laser is thought to be important in terms of environment because radioactive materials can be reduced in volume. Lasers of comparatively long pulses were often used in the initial stage, and equipment and attached facilities were big, but

short pulse solid-state laser technology has remarkably developed in recent years. Therefore, this paper describes cleaning of contaminated materials using a short pulse solid-state laser.

L52 ANSWER 9 OF 36 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
ACCESSION NUMBER: 1999-109890 [10] WPIX
DOC. NO. NON-CPI: N1999-079764
DOC. NO. CPI: C1999-033030
TITLE: **Radioactive material** leakage **detector** for cells containing **radioactive waste** liquids in atomic power plants - is given an outer shielding and has radiation detector which detects leakage through a collimator.
DERWENT CLASS: K07 S02
PATENT ASSIGNEE(S): (ISHI) ISHIKAWAJIMA HARIMA HEAVY IND
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 10332889	A	19981218	(199910)*		4

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 10332889	A	JP 1997-155913	19970529

PRIORITY APPLN. INFO: JP 1997-155913 19970529
AN 1999-109890 [10] WPIX
AB JP 10332889 A UPAB: 19990310
NOVELTY - Drain tray (4) is arranged in the bottom of the cell (2), to which leaked concentrated radioactive waste liquid (3) is guided. The cell is equipped with a supply space (12) and a detection space (13), on either sides of its shielding wall (1). These spaces are enclosed within shielding material (11). A pipe (14) conveys the leaked concentrated waste liquid to the drain tray through the supply space. A collimator (16) fixed in the shielding wall between the spaces aids to transmit the radiation from the liquid in the pipe, to the detector (15) (placed in the detection space).

USE - for cells containing radioactive waste liquids in atomic power plants.

ADVANTAGE - Unnecessary dilutions can be prevented and

continuous monitoring of leakage of radioactive material in the waste liquid is enabled.
Dwg.1/2

L52 ANSWER 10 OF 36 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1998:676339 HCAPLUS
DOCUMENT NUMBER: 129:264765
TITLE: Concentration of radioactive waste solutions of iodine (I125) from radio immune analysis (RIA) using membrane techniques
AUTHOR(S): Arnal, J. M.; Campayo, E.; Garcia, J. Lora; Clar, I. Iborro; Miranda, M. Alcaina; Fernandez, M. Sancho
CORPORATE SOURCE: Dipartimento de Ingenieria Quimica y Nuclear, E.T.S.I. T, Universidad Politecnica de Valencia, Spain
SOURCE: Desalination (1998), 119(1-3), 185
CODEN: DSLNAH; ISSN: 0011-9164
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Streams containing I125, produced from the RIA process, classified as **radioactive waste** of low activity, are generated by all different **treatments** applied in in vitro techniques. Consequently, an accumulation of solns. containing I125 is produced in the order of 50-100 L/mo. The storage at sanitary centers and the accumulation caused by it creates a serious problem in hospitals. According to the specific activity and the installation spill authorization, there is a choice among 3 ways of handling: direct discharge, temporal storage until the **radioactive waste** decays and is then discharged, **waste** management by an authorized company. The **treatment** of **wastes** using membranes should be considered only if the 3rd way of discharge is applied. Using membranes, important reduction coeffs. in volume in the order of 10:1 are obtained. The proposed installation consists basically of 2 stages of **treatment** by membranes. In the 1st stage, the permeate is stored in an intermediate deposit tank and immediately passed to the 2nd stage, where the **radioactive** material is **removed** and the produced permeate can be considered as inert, according to the concentration of the initial radioisotopes in the **feed.** The aim is the declassification of the I125

solns. as a liquid **radioactive waste** using membrane techniques. Both, a **radioactive** concentrated **waste** and non-**contaminated waste** are obtained.

CC **60-3** (Waste Treatment and Disposal)
Section cross-reference(s): 71

L52 ANSWER 11 OF 36 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1998:236879 HCAPLUS
DOCUMENT NUMBER: 128:247958
TITLE: The use of carbonate lixiviants to remove uranium from uranium-contaminated soils
AUTHOR(S): Francis, C. W.; Timpson, M. E.; Lee, S. Y.; Elless, M. P.; Wilson, J. H.
CORPORATE SOURCE: Environmental Sciences Division, Oak Ridge National Laboratory, Oak Ridge, TN, 37831, USA
SOURCE: Journal of Radioanalytical and Nuclear Chemistry (1998), 228(1-2), 15-20
CODEN: JRNCDM; ISSN: 0236-5731
PUBLISHER: Elsevier Science S.A.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The objective of this research was to design an **extraction** media and procedure that would selectively **remove** uranium without adversely affecting the **soils'** physicochem. characteristics or generating secondary **waste** forms difficult to manage or dispose of. Investigations centered around determining the best lixiviant and how the various factors such as pH, time, and temperature influenced **extraction** efficiency. Other factors investigated included the influence of attrition scrubbing, the effect of oxidants and reductants, and the recycling of lixiviants. Exptl. data obtained at the bench- and pilot-scale levels indicated 80% to 95% of the uranium could be **removed** from the uranium-**contaminated** **soils** by using a carbonate lixiviant. The best **treatment** was three successive **extns.** with 0.25 M carbonate-bicarbonate (in presence of KMnO4as an oxidant) at 40° followed with two water rinses.

CC **60-4** (Waste Treatment and Disposal)
Section cross-reference(s): 71

IT Soils
(contaminated; uranium **removal** from **radioactive**-contaminated soils by leaching with carbonate-bicarbonate leachants containing KMnO4 as oxidant)

IT Soil pollution

(**radioactive**; uranium **removal** from **radioactive**-contaminated soils by leaching with carbonate-bicarbonate leachants containing KMnO4 as oxidant)

IT Leaching
Oxidizing agents
Radioactive pollution
Scrubbing
Soil reclamation
(uranium **removal** from **radioactive** -contaminated soils by leaching with carbonate-bicarbonate leachants containing KMnO4 as oxidant)

IT 144-55-8, Sodium bicarbonate, processes 497-19-8, Sodium carbonate, processes 7722-64-7, Potassium permanganate
(uranium **removal** from **radioactive** -contaminated soils by leaching with carbonate-bicarbonate leachants containing KMnO4 as oxidant)

IT 7440-61-1, Uranium, processes
(uranium **removal** from **radioactive** -contaminated soils by leaching with carbonate-bicarbonate leachants containing KMnO4 as oxidant)

L52 ANSWER 12 OF 36 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
ACCESSION NUMBER: 1997-323927 [30] WPIX
DOC. NO. NON-CPI: N1997-268067
DOC. NO. CPI: C1997-104628
TITLE: Radioactive metal waste fusion processing device - having a water cooled melting crucible, with a cooling water inlet and outlet and a radioactivity detector in the water outlet, this detecting infiltration of molten waste into water.
DERWENT CLASS: K07 S02 S03
PATENT ASSIGNEE(S): (KOBM) KOBE STEEL LTD
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 09127296	A	19970516	(199730)*		4

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 09127296	A	JP 1995-311613	19951106

PRIORITY APPLN. INFO: JP 1995-311613 19951106
AN 1997-323927 [30] WPIX
AB JP 09127296 A UPAB: 19970723
Radioactivity of a cooling water for cooling a copper wall of a water cooled crucible of an induction furnace is measured at an outlet side of the cooling water. The device comprises: (i) a water cooled copper wall crucible (4) incorporating an induction coil (3) on the outside of the top portion; (ii) an interior melting space for the radioactive metal **waste**; (iii) a starting block (8) under the melting space; (iv) a cooling water passage formed in the copper wall connecting; the cooling water outlet (9) with a radioactively detector (2); and (iv) a cooling water inlet (10).

ADVANTAGE - Generation of a water vapour blasting caused by contacting molten radioactive material with the cooling water is prevented by **detecting** infiltration of the **radioactive material** into the cooling water.
Dwg.1/1

L52 ANSWER 13 OF 36 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1998:609034 HCAPLUS
DOCUMENT NUMBER: 129:235073
TITLE: Removal and recovery of mercury from mixed wastes
AUTHOR(S): Weyand, Thomas E.; Koshinski, Casimir J.
CORPORATE SOURCE: Mercury Recovery Services, Inc., New Brighton, PA, USA
SOURCE: Proceedings, Annual Meeting - Air & Waste Management Association (1996), 89th, mp2001/1-mp2001/16
CODEN: PAMEE5; ISSN: 1052-6102
PUBLISHER: Air & Waste Management Association
DOCUMENT TYPE: Journal; (computer optical disk)
LANGUAGE: English
AB The US Department of Energy (DOE) wanted an effective, economical process to **remove** Hg from various **waste** streams to allow the base **waste** streams to be **treated** by conventional technologies. A com. thermal **treatment** process to recover Hg from polluted **soils** and industrial **waste** was developed. The MRS Hg **removal**/recovery process consistently achieved residual Hg concns. <1 mg/kg in simulated **soil** doped with ≤3,000 mg/kg Hg and Hg compds., and reduced Hg concns. in polluted **soil** excavated from sites along natural gas pipelines to an essential background concentration (<1 mg/kg) so the

soil could be returned to its original location. This process produces a high metallic Hg product suitable for triple refining to high purity metal, has no liquid effluent, and generates a gaseous effluent with Hg concns. normally below **detection** limits and consistently below Occupational Safety and Health Administration respirator limits. The work reported demonstrated: capability of the MRS process to **remove**/recover Hg from typical DOE **waste** streams; tech. and economic capability of the MRS process to successfully **remove** Hg from low-level **radioactive waste** containing mercury oxide, mercury sulfide, mercury chloride, and selected heavy metals; optimum processing conditions required to consistently reduce residual Hg content in typical DOE **wastes** to ≤1 mg/kg and render **treated waste** non-hazardous as defined by the **toxicity** characteristic leaching procedure test; and accurately estimate capital and operating costs of a com. **treatment** facility designed to **remove**/recover Hg from DOE **waste** streams.

CC **60-4** (Waste Treatment and Disposal)
Section cross-reference(s): 8, 19, 48

IT Soils
(contaminated; mercury **removal**/recovery from low-level **radioactive** and mixed wastes using com. MRS thermal mercury removal/recovery process)

IT **Radioactive** wastes
(low-level mixed; mercury **removal**/recovery from low-level **radioactive** and mixed wastes using com. MRS thermal mercury removal/recovery process)

IT Soil pollution
Soil reclamation
(mercury **removal**/recovery from low-level **radioactive** and mixed wastes using com. MRS thermal mercury removal/recovery process)

IT Heavy metals
(mercury **removal**/recovery from low-level **radioactive** and mixed wastes using com. MRS thermal mercury removal/recovery process)

IT 7439-97-6P, Mercury, processes
(mercury **removal**/recovery from low-level **radioactive** and mixed wastes using com. MRS thermal mercury removal/recovery process)

IT 13982-63-3, Radium-226, occurrence
(mercury **removal**/recovery from low-level **radioactive** and mixed wastes using com. MRS thermal mercury removal/recovery process)

IT 12653-71-3P, Mercury oxide 37251-50-6P, Mercury sulfide
51312-24-4P, Mercury chloride
(mercury **removal**/recovery from low-level **radioactive** and mixed wastes using com. MRS thermal mercury removal/recovery process)

L52 ANSWER 14 OF 36 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1998:174966 HCAPLUS
DOCUMENT NUMBER: 128:184174
TITLE: In situ vitrification (ISV): an evaluation of the disposition of contaminant species during thermal processing
AUTHOR(S): Campbell, Brett E.; Hansen, James E.; Timmerman, Craig L.
CORPORATE SOURCE: Geosafe Corporation, Richland, WA, USA
SOURCE: Proceedings of the International Conference on Incineration and Thermal Treatment Technologies, Savannah, May 6-10, 1996 (1996), 547-552. University of California, Irvine: Irvine, Calif.
CODEN: 65TTAP
DOCUMENT TYPE: Conference
LANGUAGE: English
AB The ISV technol. is a joule-heated elec. melting technol. that **treats contaminated soil** and other earthen materials (e.g.,sediment, sludge, fly ash, mill tailings) for the primary purposes of destroying, **removing**, or immobilizing hazardous, **radioactive**, and mixed contaminants. ISV may be applied to **soils** and **wastes** of various types and configurations, as well as to a broad range of organic, inorg., and **radioactive** contaminants. Contaminants are either destroyed, immobilized, and/or **removed** during ISV **treatment.** The predominant disposition of heavy metals and most radionuclides is chemical or phys. incorporation within the resulting vitreous monolith, which produces a permanent immobilization result. The high temperature created during ISV processing destroys organic compds. by pyrolysis which results in the conversion of the organic species to nonhazardous gaseous compds. and their eventual conversion to combustion products, such as CO2 and H2O. The movement of organic materials within the **treatment** zone is governed by several mechanisms as they are converted from solid to gaseous

phase and then destroyed via pyrolysis. Although competing mechanisms exist, which tend to move the organic contaminants either toward or away from the advancing melt front, the net movement of organic vapors is in the direction of the **soil**/melt interface and toward the ground surface.

CC **60-4** (Waste Treatment and Disposal)
Section cross-reference(s): 71

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L52 ANSWER 15 OF 36 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1996:679428 HCAPLUS
DOCUMENT NUMBER: 125:337894
TITLE: Composting treatment of Alachlor impacted soil amended with the white rot fungus Phanerochaete chrysosporium
AUTHOR(S): McFarland, Michael J.; Salladay, David; Ash, Doris; Baiden, Eric
CORPORATE SOURCE: Utah Water Res. Lab., Utah State Univ., Logan, UT, 84322-8200, USA
SOURCE: Hazardous Waste & Hazardous Materials (1996), 13(3), 363-373
CODEN: HWHME2; ISSN: 0882-5696
PUBLISHER: Liebert
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Laboratory **treatability** studies demonstrated that bioaugmentation of a hazardous **soil** composting system with the white rot fungus, Phanerochaete chrysosporium, resulted in complete alachlor transformation within 56 days of **treatment.** Alachlor transformation rates were enhanced by >1 order of magnitude as a result of fungal inoculation vs. **soil**-only and organic amendment systems. First order transformation reaction rates were estimated to be 0.0098, 0.012. and 0.185/day for **soil**-only, organic amendment, and fungal-inoculated systems, resp. These transformation rates corresponded to average pollutant half lives of 70.7, 57.8, and 3.7 days for **soil**-only, **soil** plus organic amendment, and fungal-amended systems, resp. An 18.25 mg alachlor/kg **soil**-day maximum transformation rate was observed for the

fungal-inoculated system. Mass balance analyses showed neither mineralization nor volatilization was a major alachlor transformation mechanism during **soil** compost **treatment.** Less than 1% of alachlor added could be accounted for as 14CO2; no pollutant **radioactivity** was **detected** in volatile organic traps. The predominant pollutant transformation mechanism was bound residue formation or, irreversible binding of alachlor (or its intermediates) to the **soil** matrix. **Radioactive** mass balances were >80%, which provided confidence in estimated alachlor transformation rates. A significant amount of **radioactivity** associated with the CH3OH solvent **extract** indicated alachlor not bound to the **soil** matrix was being transformed to chemical intermediates. The identity and **toxicity** of these intermediate compds. were not identified.

CC **60-4** (Waste Treatment and Disposal)
Section cross-reference(s): 5, 10, 19, 67

L52 ANSWER 16 OF 36 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
ACCESSION NUMBER: 1994-234358 [28] WPIX
DOC. NO. NON-CPI: N1994-185305
DOC. NO. CPI: C1994-106567
TITLE: Neutralisation of bio-hazardous waste - by treatment with radio frequency (RF) electromagnetic radiation and high temperature steam.
DERWENT CLASS: B07 D22 J04 K07 P34
INVENTOR(S): DATAR, R V; RIOS, L G
PATENT ASSIGNEE(S): (THRE-N) 3-I SYSTEMS; (DATA-I) DATAR R V; (RIOS-I) RIOS L G
COUNTRY COUNT: 44
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 9414480	A1	19940707	(199428)*	EN	56
RW: AT BE CH DE DK ES FR GB GR IE IT LU MC NL OA PT SE					
W: AU BB BG BR BY CA CZ FI HU JP KR KZ LK LV MG MN MW NO NZ PL RO RU SD SK UA UZ					
US 5340536	A	19940823	(199433)		19
AU 9458727	A	19940719	(199439)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 9414480	A1	WO 1993-US12365	19931217
US 5340536	A	US 1992-993944	19921218
AU 9458727	A	AU 1994-58727	19931217

FILING DETAILS:

PATENT NO	KIND		PATENT NO
AU 9458727	A	Based on	WO 9414480

PRIORITY APPLN. INFO: US 1992-993944 19921218
AN 1994-234358 [28] WPIX
AB WO 9414480 A UPAB: 19940831
Neutralisation of biohazardous wastes involves by thermal neutralisation using radio frequency (RF) radiation and high temperature steam.

The waste is pref. shredded before treatment. Continuous validation of all steps of the treatment process is provided.

USE/ADVANTAGE - Used for the neutralisation or destruction of medical waste. Method is rapid and efficient.

Dwg.1/6

ABEQ US 5340536 A UPAB: 19941010
Hazardous biological **waste** is neutralised by treating with steam under suepratmos. pressure, and maintaining the pressure while treating with electromagnetic radiation so that water in the **waste** is at 132-171 deg.C and 15-18 psig, pref. 16.5 psig.

The radiation may have a frequency of 10 kHz - 300 GHz or may be 1-200 MHz RF radiation.

The appts. is claimed and pref. includes a **waste** shredder with a fluidtight connection to a treatment chamber, and a unit for **detecting radioactive material** in the **waste.**

USE/ADVANTAGE - Partic. for treatment of medial **waste** , but also for veterinary, food or pharmaceutical **waste** provides closed, continuous and controllable treatment giving a safe product.

Dwg.0/6

L52 ANSWER 17 OF 36 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1995:935989 HCAPLUS
DOCUMENT NUMBER: 124:36638

TITLE: Full-scale soil/sediment washing for volumetric reduction & waste minimization at CERCLA, RCRA, DOE & DOD hazardous waste sites
AUTHOR(S): Traver, Richard P.; O'Brien, Scott C.
CORPORATE SOURCE: Bergmann USA, Gallatin, TN, USA
SOURCE: Proceedings, Annual Meeting - Air & Waste Management Association (1994), 87th(Vol. 14A, Contaminated Site Remediation Technologies), 1-18, Paper 94-MP21.05
CODEN: PAMEE5; ISSN: 1052-6102
PUBLISHER: Air & Waste Management Association
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The **soil**/sediment washing system is to **remove** metals, **radioactivity**, and orgs. from **contaminated soil** particles >45 μm (325 mesh) to acceptable cleanup or release levels, and sep. the clean coarse from **contaminated** fines for further **treatment.** The full-scale demonstration projects are presented, including volumetric reduction and **waste** minimization of PCB **contaminated** dredge spoils from Saginaw river, Michigan, and processing of Toronto harbor sediments.

CC **60-4** (Waste Treatment and Disposal)
Section cross-reference(s): 19, 61

L52 ANSWER 18 OF 36 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1995:170954 HCAPLUS
DOCUMENT NUMBER: 122:63411
TITLE: 300-FF-1 physical separations CERCLA treatability test plan: Revision 1
CORPORATE SOURCE: United States Dept. of Energy, Richland Field Off., Richland, WA, USA
SOURCE: Report (1993), DOE/RL-92-21-Rev.1; Order No. DE93014915, 58 pp. Avail.: NTIS
From: Energy Res. Abstr. 1993, 18(9), Abstr. No. 25861
DOCUMENT TYPE: Report
LANGUAGE: English

AB This test plan describes specifications, responsibilities, and general procedures to be followed to conduct phys. sepns. **soil treatability** tests in the north process pond of the 300-FF-1 Operable Unit at the Hanford Site. The overall objective of these tests is to evaluate the use of phys. sepns. systems as a means of concentrating chemical and radioactive contaminants into fine **soil** fractions, and thereby

minimizing **waste** vols. If successful, the technol. could be applied to clean up millions of cubic meters of **contaminated soils** at Hanford and other sites. In this document, phys. sepns. refers to a simple and comparatively low cost technol. to potentially achieve a significant reduction in the volume of **contaminated soils** without the use of chemical processes. **Removal** of metals and **radioactive** contaminants from the fine fraction of **soils** may require addnl. **treatment** such as chemical **extraction**, electromagnetic separation, or stabilization. Investigations/testing of these technologies are recommended to assess the economic and tech. feasibility of addnl. **treatment**, but are not within the scope of this test. This plan provides guidance and specifications for two proposed **treatability** tests: one to be conducted by Westinghouse Hanford Company; and another proposed as competitive bid service contract. The main body of this test plan discusses the tests in general and items that are common to both tests. Attachment A discusses in detail the EPA system test and Attachment B discussions the vendor test.

CC **60-4** (Waste Treatment and Disposal)
Section cross-reference(s): 71

L52 ANSWER 19 OF 36 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1994:61547 HCAPLUS
DOCUMENT NUMBER: 120:61547
TITLE: Hanford Site physical separations CERCLA treatability test plan
CORPORATE SOURCE: United States Dept. of Energy, Richland Field Off., United States Dept. of Energy, WA, USA
SOURCE: Report (1992), DOE/RL-92-21; Order No. DE93002048, 39 pp. Avail.: NTIS From: Energy Res. Abstr. 1993, 18(3), Abstr. No. 5136
DOCUMENT TYPE: Report
LANGUAGE: English

AB This test plan describes specifications, responsibilities, and general procedures to conduct a phys. sepns. **soil treatability** test in the North Process Pond of the 300-FF-1 Operable Unit at the Hanford Site, Washington state. This test will evaluate the use of phys. separation systems as a means of concentrating chemical and **radioactive** pollutants into fine **soil** fractions thereby minimizing **waste** vols. If successful, the technol. could be used to clean up millions of cubic meters of polluted **soils** in **waste** sites

at Hanford and other sites. This test is not to **remove** **contaminated** materials from fine **soils**; phys. separation is a simple and comparatively low cost technol. to potentially achieve a significant reduction in the volume of polluted **soils**. Organic pollutants are expected to be insignificant in the 300-FF-1 Operable Unit test; further **removal** of metals and **radioactive** pollutants from the fine **soils** fraction will require secondary **treatment** such as chemical **extraction**, electromagnetic separation, or other technologies. Addnl. investigations and testing are recommended to assess the economic and tech. feasibility of applying secondary **treatment** technologies, but are not within the scope of this test. This plan provides guidance and specifications for the **treatability** test to be conducted as a service contract. More detailed instructions and procedures will be provided as part of the vendor's proposal. Procedures will be approved and finalized by the vendor prior to initiating the test.

CC **60-4** (Waste Treatment and Disposal)
Section cross-reference(s): 8, 19, 45, 49, 71

L52 ANSWER 20 OF 36 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1992:180383 HCAPLUS
DOCUMENT NUMBER: 116:180383
TITLE: Physical/chemical treatment of mixed waste solids
AUTHOR(S): Morris, Michael I.; Alperin, E. S.; Fox, R. D.
CORPORATE SOURCE: Martin Marietta Energy Syst., Oak Ridge, TN, USA
SOURCE: Proceedings, Annual Meeting - Air & Waste Management Association (1991), 84th(Vol. 11), Paper 91/25.5, 16 pp.
CODEN: PAMEE5; ISSN: 1052-6102
DOCUMENT TYPE: Journal
LANGUAGE: English

AB **Treating** mixed **wastes** containing polychlorinated biphenyls (PCB's) by low-temperature thermal separation (LTTS) technol., where orgs. are volatilized in an indirectly heated rotary calciner and transferred in an inert gas stream to air pollution control equipment, reduced PCB **contamination** from ≤37.5 ppm to the regulatorily acceptable standard of <2 ppm at a total residence time of 19 min at 550°, given a

treated soil that can be managed as low-level **radioactive waste.** The **waste** separator and **feed** system, the LTTS system, and the sampling and monitoring procedures are described and discussed. No polychlorinated dibenzodioxins were found in any **treated** process samples. The inert gas exiting the thermal separator was passed through a cyclone to **remove** some of the particulates, was scrubbed and cooled to condense the majority of volatilized orgs., and was passed through a mist eliminator, a high-efficiency particulate air filter, and 2 C adsorbers before being vented to the atmospheric No radionuclides were emitted to the atmospheric

CC **60-4** (Waste Treatment and Disposal)
Section cross-reference(s): 4, 19, 59, 71

ST mixed waste PCB thermal removal; **radioactive** waste PCB **removal**; chlorobiphenyl removal mixed waste thermal; org removal waste gas mixed waste

IT **Waste solids**
(**contaminated soils**, polychlorinated biphenyl- and radioelement-containing, organic **removal** from, by thermal **treatment**, and **treatment** of **waste** gas therefrom)

L52 ANSWER 21 OF 36 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
ACCESSION NUMBER: 1990-249994 [33] WPIX
DOC. NO. NON-CPI: N1990-193599
DOC. NO. CPI: C1990-108216
TITLE: **Detection** of leaking **radioactive waste** from container - by adhering dye to gp. of containers in pit so that water entering any cracks becomes coloured.
DERWENT CLASS: K07 S02
PATENT ASSIGNEE(S): (ISHI) ISHIKAWAJIMA HARIMA JUKOGYO KK
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 02173542	A	19900705	(199033)*		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 02173542	A	JP 1988-328670	19881226

PRIORITY APPLN. INFO: JP 1988-328670 19881226
AN 1990-249994 [33] WPIX
AB JP 02173542 A UPAB: 19930928
Water soluble dye is adhered to containers of radioactive **waste** forming groups in a pit. When water enters the pit and into the container through cracks it becomes coloured and is detected. Different colours used for different gps. of containers enables damaged gp. to be identified.
ADVANTAGE - Leak of **radioactive material** can be **detected** and container in which crack is formed can be repaired.

L52 ANSWER 22 OF 36 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1991:191806 HCAPLUS
DOCUMENT NUMBER: 114:191806
TITLE: Remediation of contaminated soil using heap leach mining technology
AUTHOR(S): York, Don A.; Aamodt, Paul L.
CORPORATE SOURCE: Los Alamos Natl. Lab., Univ. California, Los Alamos, NM, USA
SOURCE: Min. Miner. Process. Wastes, Proc. West. Reg. Symp. (1990), 255-9. Editor(s): Doyle, Fiona M. Soc. Min. Metall. Explor.: Littleton, Colo.
CODEN: 57AKA8
DOCUMENT TYPE: Conference
LANGUAGE: English
AB Heap **treatment** of excavated **soils** to **remove** and **treat** hazardous chemical and **radioactive wastes** is being evaluated.
CC **60-4** (Waste Treatment and Disposal)
Section cross-reference(s): 19

L52 ANSWER 23 OF 36 COMPENDEX COPYRIGHT 2005 EEI on STN
ACCESSION NUMBER: 1990(5):50473 COMPENDEX
DOCUMENT NUMBER: 900558696
TITLE: Helping to reduce effluent generation.
AUTHOR: Bradbury, David (Bradtech, Wotton-Under-Edge, Engl)
SOURCE: Nucl Eng Int v 34 n 422 Sep 1989 p 44, 46
CODEN: NEINBF ISSN: 0029-5507
PUBLICATION YEAR: 1989
DOCUMENT TYPE: Journal
TREATMENT CODE: Application; General Review
LANGUAGE: English

AN 1990(5):50473 COMPENDEX DN 900558696
AB Improved radioactive effluent treatment technology in the UK may be essential if dissolved salts are to continue to be discharged to the environment.Whatever the detail of an effluent treatment process, the overall objective is usually to **remove radioactive materials** from the liquid phase (for conversion to a minimum volume of stable **solid waste** for retention or disposal).The treated liquid effluent will normally be discharged, but in some cases the liquid can be recycled, which eliminates the effluent altogether.Some effluent treatment processes are examined briefly: evaporation, floc precipitation, ion exchange, filtration, new membrane processes, seeded ultrafiltration, electrical processes, biological treatment, a combination of electrolysis and gas/liquid exchange to remove tritium, and the removal of organic materials lest they solubilize or extract radionuclides.

L52 ANSWER 24 OF 36 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1989:178976 HCAPLUS
DOCUMENT NUMBER: 110:178976
TITLE: Treatment of actinides-containing wastewater
INVENTOR(S): Sakaguchi, Koji; Uchikoshi, Tsuguo
PATENT ASSIGNEE(S): Mitsubishi Atomic Power Industries, Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 63248491	A2	19881014	JP 1987-83674	1987 0404
JP 03035997	B4	19910530		

PRIORITY APPLN. INFO.: JP 1987-83674 1987 0404

AB **Radioactive wastewater** containing actinides is **treated** by passing the **feed** stream through a fixed-bed column packed with a stabilized tannin-group adsorbent at a liquid space velocity (LHSV) of 30-300 h-1, and then desorbing the bed with 0.01-0.5 N HNO3 or H2SO4 to recover the actinides and to regenerate the stabilized tannin-group adsorbent. The actinide-group elements are U, Th, or Pu, and the **radioactive wastewater** is adjusted at pH 6.2-10.5, prior to **feeding** into the fixed bed-column. Thus, a **radioactive wastewater** containing 65 ppm U was adjusted pH to 8.2, and then passed through the fixed-bed column packed with stabilized nutgall tannins at LHSV 55 h-1, resulting in the **removal** of 98% U from the **treated** water.

IC ICM C02F001-28

CC **60-2** (Waste Treatment and Disposal)
Section cross-reference(s): 71

ST **radioactive** wastewater actinide uranium **removal** ; nutgall tannin adsorbent radioactive wastewater; plutonium thorium **removal radioactive** wastewater

IT Actinides
(**removal** of, from **radioactive** wastewaters, stabilized tannins-group adsorbents for)

IT 7440-07-5, Plutonium, uses and miscellaneous 7440-29-1, Thorium, uses and miscellaneous 7440-61-1, Uranium, uses and miscellaneous
(**removal** of, from **radioactive** wastewaters, stabilized tannins-group adsorbents for)

L52 ANSWER 25 OF 36 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
ACCESSION NUMBER: 1988-188597 [27] WPIX
DOC. NO. NON-CPI: N1988-143989
DOC. NO. CPI: C1988-084484
TITLE: Storing and disposing of radioactive material, etc. - using monitoring device detecting leaks and having secondary artificial barrier for waste material.
DERWENT CLASS: K07 P43
PATENT ASSIGNEE(S): (TAKE-N) TAKENAKA DOBOKU KK
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 63128298	A	19880531	(198827)*		4
JP 08012279	B2	19960207	(199610)		3

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 63128298	A	JP 1986-274965	19861118
JP 08012279	B2	JP 1986-274965	19861118

FILING DETAILS:

PATENT NO	KIND		PATENT NO
JP 08012279	B2	Based on	JP 63128298

PRIORITY APPLN. INFO: JP 1986-274965 19861118
AN 1988-188597 [27] WPIX
AB JP 63128298 A UPAB: 19930923
In the method of storing and disposing e.g. radioactive material an impermeable cut off film or cut off wall, in which the film material is incorporated, is built in ground around storage and disposing facility for various industrial wates components to form
secondary artificial barrier. By installing monitoring equipment,
leaks can be detected and sampling and discharging underground water, is mounted in the artificial barrier and outside the storage and disposing facility. Using the monitoring equipment storage and disposal material is prevented from leaking outside of
the artificial barrier.
USE/ADVANTAGE - Effectively prevents leaks of waste material and therefore effects safe storage.
0/4

L52 ANSWER 26 OF 36 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
ACCESSION NUMBER: 1987-252520 [36] WPIX
DOC. NO. CPI: C1987-106809
TITLE: Curing appts. for radioactive waste - includes a mixing tank and weight detector to measure the amount
of charged radioactive material and curing material.
DERWENT CLASS: K07

PATENT ASSIGNEE(S): (TOKE) TOSHIBA KK
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 62172299	A	19870729	(198736)*		3

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 62172299	A	JP 1986-13489	19860124

PRIORITY APPLN. INFO: JP 1986-13489 19860124
AN 1987-252520 [36] WPIX
AB JP 62172299 A UPAB: 19930922
Curing device comprises a mixing tank, in which radioactive waste and curing material are charged; and a weight measuring device, measuring the weight of the mixing tank and the amount of charged materials. In the curing device, the weight measuring device measures the weight of the mixing tank to give the initial value, before charging materials into the mixing tank, and measures the amount of charged material.
USE/ADVANTAGE - The weight of material charged in the mixing tank is accurately measured.
0/1

L52 ANSWER 27 OF 36 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
ACCESSION NUMBER: 1985-208121 [34] WPIX
DOC. NO. NON-CPI: N1985-156144
DOC. NO. CPI: C1985-090760
TITLE: **Detecting** contamination with **radioactive material** - e.g. **waste** from nuclear power plant such as gloves etc. (J5 30.6.81).
DERWENT CLASS: K07
PATENT ASSIGNEE(S): (DORY) DORYOKURO KAKUNENRYO KAIHATSU
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 60032143	B	19850726	(198534)*		2
JP 56079979	A	19810630	(198534)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 60032143	B	JP 1979-156996	19791204

PRIORITY APPLN. INFO: JP 1979-156996 19791204
AN 1985-208121 [34] WPIX
AB JP 85032143 B UPAB: 19930925
The wastes include rubber gloves used in the facility. The wastes
are shredded, stirred with air and sampled to measure the radioactivity. (J56079979-A)
0/1

L52 ANSWER 28 OF 36 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
ACCESSION NUMBER: 1984-033835 [06] WPIX
DOC. NO. CPI: C1984-014364
TITLE: Treating radioactive material-containing concentrate salt
waste liquor - involves adding divalent metal ions, ferrocyanide ions, ferric ions, alkali solution,sulphide ions etc..
DERWENT CLASS: D15 K07
PATENT ASSIGNEE(S): (NIGJ) NIPPON ATOMIC IND GROUP CO LTD; (TOKE) TOKYO SHIBAURA ELECTRIC CO
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 58223797	A	19831226	(198406)*		5
JP 64002917	B	19890119	(198907)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 58223797	A	JP 1982-106835	19820623

PRIORITY APPLN. INFO: JP 1982-106835 19820623
AN 1984-033835 [06] WPIX
AB JP 58223797 A UPAB: 19940307
Method includes adding successively to the **waste** liquor (A) a divalent Ni, Co, M or Zn ion; (B) a ferrocyanide ion in an

equivalent amount or more to (a); and (C) a ferric ion in an equivalent amount
or more to the excess amount of ferrocyanide ion; adding alkali to
adjust pH to 8.5-11, adding sulphide ion, then adding a metal ion capable of reacting with the sulphide ion to produce a ppte., separating the ppte. adding Zn++ or Zr++ (sic) and Co++ to the separated
waste liquor at pH 4 or below, then adding
1-nitroso-2-naphthol, and then separating the resulting ppte..
Separating performance is good, and as **radioactive materials** cannot be **detected** in the treated
waste liquor, the **waste** liquor can be disposed
of after it is neutralised. Volume of sludge separated from treated
waste liquor is very low. Simple appts. may be used.
Dwg.0/0

L52 ANSWER 29 OF 36 NTIS COPYRIGHT 2005 NTIS on STN
ACCESSION NUMBER: 1981(45):04045
NTIS ORDER NUMBER: PB81-166274/XAB
TITLE: Report of the Task Force on Low-Level Radioactive Waste. Position paper.
CORPORATE SOURCE: Radiation Policy Council, Washington, DC. (071604000)
NUMBER OF REPORT: PB81-166274/XAB; RPC-80-004
39p; 15 Aug 1980
CONTROLLED TERM: Report
COUNTRY: United States
LANGUAGE: English
AVAILABILITY: Order this product from NTIS by: phone at 1-800-553-NTIS (U.S. customers); (703)605-6000 (other countries); fax at (703)605-6900; and email at orders@ntis.gov. NTIS is located at 5285 Port Royal Road, Springfield, VA, 22161, USA.
NTIS Prices: PC A03/MF A01
OTHER SOURCE: GRA&I8114
AB The Radiation Policy Council formed a Task Force in May 1980 to consider the problems associated with low-level radioactive **waste** disposal. Two major objectives were developed by the Task Force: (1) To recommend Federal policy for improving coordination and implementation of Federal and non-Federal programs that have been established to obtain solutions to existing low-level **waste** disposal problems and (2) to recommend Federal policy for disposal of low-level **waste** containing minimal activity for which alternative disposal

methods to existing shallow land burial practices may be acceptable for protecting the public health. These **wastes** constitute a significant fraction of what is currently classified as low-level radioactive **wastes.** Included are most of the **wastes** currently destined for shallow land burial from medical and research institutions, as well as from other sources. Such **wastes** include liquid scintillation vials, dry solids, animal carcasses, and paper trash; there are many items included which are needlessly classified, on a purely arbitrary basis, as '**radioactive waste**' merely because they contain **detectable radioactive materials.** It is this **waste** which is of major concern.

L52 ANSWER 30 OF 36 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1981:108759 HCAPLUS
DOCUMENT NUMBER: 94:108759
TITLE: A **radioactive** dust **removal** unit
PATENT ASSIGNEE(S): Shinwa Trading and Engineering Co., Ltd., Japan; Nikki K. K.
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 55112599	A2	19800830	JP 1979-20058	1979 0222
JP 58028560	B4	19830616		

PRIORITY APPLN. INFO.: JP 1979-20058 A 1979 0222

AB **Radioactive** dust is **removed** from **waste** gases from nuclear power plants by filtration using an apparatus designed to **treat** the **waste** gas at

≤150°. The apparatus is of the top- **feed** and bottom-draw type, and the dust is **removed** in multiple stages with filter bags that have an opening end (for each) which is automatically sealed when the doors of bag-containing compartments are opened.

IC G21F009-02; B01D046-00

CC **60-2** (Sewage and Wastes)
Section cross-reference(s): 59, 71

IT Filters and Filtration apparatus
(for **radioactive** dust **removal** from waste gas from nuclear power plant)

IT **Radioactive** wastes
(gaseous, gas **removal** from, system for, in nuclear power plant)

IT Power
(nuclear, plants, waste gas from, **radioactive** gas **removal** from, system for)

L52 ANSWER 31 OF 36 POLLUAB COPYRIGHT 2005 CSA on STN
ACCESSION NUMBER: 79:7852 POLLUAB
DOCUMENT NUMBER: 82-03790
TITLE: New Monitor for **Detecting** Accidental Addition of **Radioactive Materials** to Conventional **Wastes**
AUTHOR: Rodenbaeck, B.
CORPORATE SOURCE: Kernforschungsanlage Juelich GmbH
SOURCE: IN "PROC. 7TH REGIONAL CONG. IRPA/13TH ANNL. CONF. FACHVERBAND FUR STRAHLENSCHUTZ", (1979) . L.F.FRANZEN, GRS, POSTFACH 10 16 50, D-5000 KOLN 1, FRG. 7th Regional Cong. IRPA/13th Annl. Conf. Fachverband fur Strahlenschutz "Radioactive Wastes"
.
Meeting Info.: Cologne, FRG. 16-19 Oct. 1979.
FILE SEGMENT: DCPA
LANGUAGE: English

AB For many years the conventional wastes of the Juelich Nuclear Research Center have been monitored for unintentional additions of radioactive material before being transferred to a public garbage pit. This monitoring has been performed by a health physics assistant. Recently an automatic monitoring device was installed. The main unit of this testing device is a scintillator probe. The sensitivity and directional independence of the probe for different nuclides showed its suitability for monitoring

conventional waste in steel containers. For this purpose an appropriate mechanism was designed.

L52 ANSWER 32 OF 36 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
ACCESSION NUMBER: 1979:197157 BIOSIS
DOCUMENT NUMBER: PREV197967077157; BA67:77157
TITLE: DISTRIBUTION METABOLISM AND EXCRETION OF TOLUENE IN MICE.
AUTHOR(S): KOGA K [Reprint author]
CORPORATE SOURCE: DEP PHARMACOL, SAPPORO MED COLL, S1, W 17, CHUO, SAPPORO 060, JPN
SOURCE: Folia Pharmacologica Japonica, (1978) Vol. 74, No. 6, pp. 687-698.
CODEN: NYKZAU. ISSN: 0015-5691.
DOCUMENT TYPE: Article
FILE SEGMENT: BA
LANGUAGE: JAPANESE

AB Tissue distribution, metabolism and excretion of 14C-labeled toulene were investigated after a single i.p. administration (290 μg/kg) of the compound into mice. The highest radioactivity was detected in the adipose tissue, followed in descending order by the kidney, liver and lung. The lowest radioactivity was retained in brain tissue and the brain/blood concentration ratio was about 0.4. Radioactivity in the blood declined exponentially and the biological half-life was estimated as 25 min. **Radioactive materials detected** at as early as 8 min in the kidney (78%) and liver (64%) proved to be non-volatile metabolites. On the contrary, 70% of radioactive materials in the brain and near 100% in the adipose tissue were a volatile compound (probably unchanged toluene). The cumulative urinary excretion of radioactivity was 26.4% of the dose at 30 min and 73.8% at 18 h, whereas the pulmonary or fecal excretion was negligibly small. Radioactive materials excreted in the urine were identified by paper and TLC as hippuric acid (59%) and benzoylglucuronic acid (41%). Toluene is metabolized rapidly and is excreted mainly in the urine. The relative importance of glucuronide formation in **detoxication** mechanisms was noted.

CC Radiation biology - Radiation and isotope techniques 06504
Clinical biochemistry - General methods and applications 10006
Biochemistry - Gases 10012
Biochemistry methods - General 10050
Biochemistry studies - General 10060
Biochemistry studies - Nucleic acids, purines and pyrimidines

10062
Biochemistry studies - Lipids 10066
Biophysics - Methods and techniques 10504
Chordate body regions - Abdomen 11314
Physiology - Instrumentation 12004
Movement 12100
Metabolism - General metabolism and metabolic pathways 13002
Digestive system - Physiology and biochemistry 14004
Blood - Blood and lymph studies 15002
Urinary system - Physiology and biochemistry 15504
Respiratory system - Physiology and biochemistry 16004
Bones, joints, fasciae, connective and adipose tissue - Physiology
and biochemistry 18004
Nervous system - Physiology and biochemistry 20504
Routes of immunization, infection and therapy 22100
Toxicology - General and methods 22501
Toxicology - Antidotes and prevention 22505
IT Major Concepts
Metabolism; Skeletal System (Movement and Support); Toxicology;
Urinary System (Chemical Coordination and Homeostasis)
IT Miscellaneous Descriptors
HIPPURIC-ACID BENZOYL GLUCURONIC-ACID DE TOXICATION MECHANISM
ORGN Classifier
Muridae 86375
Super Taxa
Rodentia; Mammalia; Vertebrata; Chordata; Animalia
Taxa Notes
Animals, Chordates, Mammals, Nonhuman Vertebrates, Nonhuman Mammals, Rodents, Vertebrates
RN 108-88-3 (TOLUENE)
495-69-2 (HIPPURIC-ACID)
2652-65-5 (BENZOYL)
576-37-4Q (GLUCURONIC-ACID)
6556-12-3Q (GLUCURONIC-ACID)

L52 ANSWER 33 OF 36 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1978:41274 HCAPLUS
DOCUMENT NUMBER: 88:41274
TITLE: Removal of plutonium and uranium from process streams using ultrafiltration membranes
AUTHOR(S): Roberts, R. C.; Koenst, J. W.
CORPORATE SOURCE: Mound Lab., Miamisburg, OH, USA
SOURCE: Report (1977), MLM-2423(OP), 18 pp. Avail.: NTIS
From: ERDA Energy Res. Abstr. 1977, 2(19),

Abstr. No. 45169
DOCUMENT TYPE: Report
LANGUAGE: English
AB Hollow fiber ultrafiltration modules were used for **treating waste** streams **contaminated** with 238Pu, and 233U. These modules had various mol. weight of 2000-80,000. The **waste** solution studied consisted of **waste** water from the "hot" laundry, decontamination water from the Pu processing building, and influent to the **waste** disposal (WD) building. **Removal** of suspended or colloidal material was very high, while **removal** of ionic material was very low. Laundry **wastewater** yielded a rejection of **radioactivity** ≤99.8%, with a product concentration of <0.1 dis/min/mL. Decontamination water yielded a rejection of **radioactivity** of 85-8% with a product concentration of 166-229 dis/min/mL (initial **feed** was 1440 dis/min/mL). WD influent showed a rejection of **radioactivity** of 90-8% and a product concentration of 7-100 dis/min/mL, depending upon initial concentration and the nature of the **waste** stream.
CC **60-2** (Sewage and Wastes)
Section cross-reference(s): 71
IT **Radioactive** wastes
(plutonium and uranium **removal** from, hollow fiber ultrafiltration modules in)
IT Membranes and Diaphragms
(ultrafiltration, hollow-fiber, for **removal** of plutonium and uranium from **radioactive** wastes)
IT 7440-07-5, uses and miscellaneous 7440-61-1, uses and miscellaneous
(**removal** of, from **radioactive** effluents, hollow fiber ultrafiltration moldules in)

L52 ANSWER 34 OF 36 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1975:47524 HCAPLUS
DOCUMENT NUMBER: 82:47524
TITLE: Filtration of waste solutions containing radioactive suspended solids
INVENTOR(S): Shimizu, Hiroshi; Tsuda, Yonezo; Yoshida, Yasushi
PATENT ASSIGNEE(S): Japan Organo Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 49086800	A2	19740820	JP 1972-129006	1972 1222
JP 52010520	B4	19770324		

PRIORITY APPLN. INFO.: JP 1972-129006 A 1972 1222

AB A solution containing **radioactive** suspended solids is passed through an electromagnetic filter to **remove** paramagnetic suspensions, and the solution is then allowed to flow across the filter membrane of a super-filter so that some of the solution is filtered and remaining solution is recycled to the **feed** solution into the super-filter (or to the electromagnetic filter).

The use of electromagnetic filter for **removal** of the suspended Fe compds. prolongs the operational duration of the super-filter, and also reduces the amount of filtering aids required. Thus, **waste** solution containing 10.9 ppm total Fe and having turbidity 60 was passed through, at 0.2 m/sec, an electromagnetic filter tower having inside diameter 25 mm and height 1000 mm packed with spiral-band-shaped ferromagnetic packing (700 mm), and then fed into a super-filter with spiral-round-type acetyl cellulose filter with effective surface area of 3 m2. The rate of the **feed** solution was 850 l./hr, the pressure was 14-16 kg/cm2. The 350 l./hr was filtered through the paper while the remaining 500 l./hr was recycled to the **feed.** The **treated** solution contained 0.006 ppm Fe and had turbidity of 0.

NCL 136H42; 13(7)A21
CC **60-2** (Sewage and Wastes)
Section cross-reference(s): 71
IT 7439-89-6, uses and miscellaneous
(**removal** of, **radioactive** suspensions, electromagnetic filtration in)

L52 ANSWER 35 OF 36 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1960:99174 HCAPLUS
DOCUMENT NUMBER: 54:99174
ORIGINAL REFERENCE NO.: 54:18838h-i,18839a-c
TITLE: **Waste** management and monitoring at Chalk River
AUTHOR(S): Mawson, C. A.; Russell, A. E.; Ophel, I. L.; Jones, A. R.; Merritt, W. F.; Parsons, P. J.
SOURCE: At. Energy Can. Ltd., Chalk River, Ont. (1959), Volume Date 1960, AECL-987, 30 pp.
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB Liquid **wastes** from storage tanks are pumped below the surface of pits, which are cut in a sandy hillock and filled with 4-6-cm. pebbles. Solids and small amts. of liquids in polyethylene bottles and steel drums are disposed of in sand trenches, concrete trenches, cement tile holes, and in cribs with asphalt to seal the layers of bottles. The drainage from Chalk River goes through Perch Lake and Perch Creek, which empties into the Ottawa River. All effluent entering the river is sampled by means of a proportional-flow counter. Samples are assayed daily for total β, γ, and α emitters. Samples are analyzed weekly for Sr89, Sr90, Ce144, Ru106, U238, and Pu239. During 1958 the short-lived nuclides averaged 1.5 + 10-5 μc./ml. and the long-lived fission products averaged 5 + 10-7 μc./ml. Tests of the river bed show that the rate of deposition is less than the rate of leaching of radio-nuclides deposited several years ago. P32 makes up 75-95% of the activity in river organisms, although it is less than 0.04% of the total radioactivity in the effluent. The roads of the surrounding area are surveyed by means of a detector with a 2-in. anthracene crystal mounted on a four-wheel-drive vehicle. This instrument is useful in establishing the background of a site before operation as well as possible contamination later. Radioactivity in ground H2O is measured by means of dry wells with thin-walled Al casings into which a **Geiger counter** is lowered, H2O samples collected from porous thimbles at various depths, and samplers that collect undisturbed soil at various depths. The results are useful for predicting movement of contamination in the H2O table and selection of sites for future disposal.

CC 14 (Water, Wastes, and Air Pollutants)
IT Radioactive substances
(**waste** disposal, at Chalk River)
IT 14596-37-3, Phosphorus, isotope of mass 32

(in **wastes** in river)

L52 ANSWER 36 OF 36 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1959:74845 HCAPLUS
DOCUMENT NUMBER: 53:74845
ORIGINAL REFERENCE NO.: 53:13542i,13543a-c
TITLE: Construction material for x-ray absorption
AUTHOR(S): Feierabend, Hans
SOURCE: Silikattechnik (1958), 9, 213-15
CODEN: SITKA7; ISSN: 0037-5233
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB The specifications of the German standard DIN 6812 for the maximum tolerable x-ray dosage are discussed with the correct use of suitable dosimeters on the basis of **Geiger counters** and ionization chambers. Further, the specifications of DIN 6811/12 for medical x-ray instrumentation and protection screens, etc., require construction materials containing elements of high atomic number, Pb being used as the standard for equivalent classifications. The following were developed: (1) $BaSO_4$ plates, (2) heavy aggregates for concretes bonded with blast furnace slag cement 225; (3) $BaSO_4$ + heavy aggregate concretes of the same type, (4) heavy **waste** dust from Fe-Mn ore enrichment (Trusetal Metall, Works), bonded with cement. The extensive testing series showed that the Pb equivalent of x-ray absorption is increased with decreasing voltage of the used x-ray tube. The aggregate grain size composition does not much affect the Pb equivalent if the grain distribution is uniform and compact enough. As a binder for concretes, an anhydrite cement (Pyramite) was also tested. A new design of the heavy brick shapes was developed, with a min. of joints, which are filled with a fine-grained $BaSO_4$ mortar. The testing can be totally automatized by the use of radioactive (e.g. Co) isotopes.
CC 20 (Cement, Concrete, and Other Building Materials)

=> d l28 1-4 ti

L28 ANSWER 1 OF 4 NTIS COPYRIGHT 2005 NTIS on STN
TI Decontamination and dismantlement of the Argonne National Laboratory-East Map Tube Facility.

L28 ANSWER 2 OF 4 NTIS COPYRIGHT 2005 NTIS on STN
TI Projects at the Component Development and Integration Facility. Quarterly technical progress report, January 1--March 31, 1993.

L28 ANSWER 3 OF 4 NTIS COPYRIGHT 2005 NTIS on STN
TI Method for **soil** removal from radioactive metal waste surface.
Method for **soil** removal from radioactive metal waste surface--Translation.

L28 ANSWER 4 OF 4 NTIS COPYRIGHT 2005 NTIS on STN
TI Results of mobile gamma scanning activities in Tonawanda, New York.

=> d l42 1-3 ti
YOU HAVE REQUESTED DATA FROM FILE 'TOXCENTER' - CONTINUE? (Y)/N:y

L42 ANSWER 1 OF 3 TOXCENTER COPYRIGHT 2005 ACS on STN
TI Radiation safety with breast sentinel node biopsy

L42 ANSWER 2 OF 3 TOXCENTER COPYRIGHT 2005 ACS on STN
TI Textile products protective against **radioactive materials**

L42 ANSWER 3 OF 3 TOXCENTER COPYRIGHT 2005 ACS on STN
TI **Radioactive materials** in water and their measurement